UNITED STATES PATENT AND TRADEMARK OFFICE

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EXAMINER
HO, HUY C

ART UNIT	PAPER NUMBER
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NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 June 2007*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 5-12* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 5-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

       1.☒ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments with respect to claims 1-3 and 5-12 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

2.   **Claim 4** is objected to under 37 CFR 1.75(c) as being in improper form because a multiple

dependent claim 3. See MPEP § 608.01(n). Accordingly, the claim 4 not been further treated on the

merits.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966),

that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are

summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

5.   **Claims 1-3 and 5-12** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Johansson (2002/0044549)** and further in view of **Habetha (7,061,895).**

Consider claim 1, (Currently Amended) [[-]] Method for channel allocation in an ad-hoc radio communication system comprising devices having an equivalent communication architecture, the devices being gathered in several piconets, the devices of a same piconet being able to directly communicate with one another, a piconet coordinator (PNC) being defined among the devices ~r forming each piconet, the multiple accegg geheme for the radio communication between the devices being based on [[a]] Code Division Multiple Access (CDMA) scheme, characterized in that the wherein a set of available CDMA codes is split into pre-defined disjoined subsets of CDMA codes (Ci), all the subsets of CDMA codes (Ci) being known by each device, and all the devices of a same piconet using CDMA codes in the same associated subset of codes (Ci) for communicating with one another, and in that for each new device added [[in]] to the ad-hoc radio communication system, it includeg the following steps the method comprises:

Johansson discloses:

[[-]] each new device scanning its radio environment looking for at least one used subset of codes which is associated with an existing piconet (sections |9|, |13|-|14|, |17|, |24|, |110|, |182|, **describing a new node joins a piconet by initiating a PAGE scan for a broadcast address in a piconet).**

[[-]]depending on the or each found u~ed ~ubooet ofcode~(C~)[[:]]

making the new device become~a piconet coordinator (PNC) of a new piconet and selecting a subset of codes for use in the new piconet if no used subset or subsets of codes are found by the scanning **(section [13], [18], disclosing a new node joins a piconet and becoming a master node, which forms a new piconet);** or

joining the new device decides to join into an existing piconet among a set of available piconets[[,]] found by the scanning to be using an existing the subset of codes of which ic already u~ed

and uses using said existing subset of codes for the next communications between the new device and the other devices of the joined existing piconet that is joined (sections [9], [13], [105], [124], describing a new link is established for a new node in a preexisting master node network, master node assigns member address code to local member of the piconet).

Johansson does not specifically show CDMA, however, Johansson discusses channel access code, device access code, inquiry access code being used during a discovery and joining of a node into piconet of a scatternet in an ad hoc network (see sections [11], [102]). Habetha discloses CDMA (see column 4 lines 1-25, where Habetha discusses CDMA method being used in an ad hoc network for data exchange between terminals).

Since both Johansson and Habetha teach about ad hoc network comprising a plurality of terminals, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify Johansson teaching, and have CDMA, taught by Habetha, to improve the reconfiguration of an ad hoc network, as discussed by Habetha (col 1 lines 1-67).

Consider claim 11, (Currently Amended) [[ ]]Device for A particular device configured to be used in an ad-hoc radio communication system[[,]] said system comprising made up of the particular device and other devices having an equivalent communication architecture, the particular device and the other devices being configured to be gathered in several piconets, each device being able to directly communicate with other devices of a same piconet by implementing a Code Division Multiple Access (CDMA) transmission method, characterized wherein the set of available codes is split into pre-defined disjoined subsets of CDMA codes (C_i)[[,]] ~ and each device comprises means in which all the subsets of CDMA codes (C_i) are stored, and ~ each device is adapted to use the CDMA codes from a subset of CDMA codes (C_i) associated [[to]] with a particular piconet for communicating with other devices of the particular piconet, and in that the particular device includes:

Johansson discloses:

[[-]]means for scanning the radio environment looking for at least one used subset of codes (Ci) ~~which is~~ associated to-a with an existing piconet when the particular device is added in to the ad-hoc radio communication system (sections |9|, |13|-|14|, |17|, |24|, |110|, [182], **describing a new node joins a piconet by initiating a PAGE scan for a broadcast address in a piconet)**, and

[[-]]means for:

[[-]]becoming a piconet coordinator (PNC) of a new piconet and for selecting a subset of codes for the new piconet if no use of at least one of the subset of codes is determined to be present as a result of the scan performed by the means for scanning (section |13|, |18|, **disclosing a new node joins a piconet and becoming a master node, which forms a new piconet)**; or

[[-]]joining an existing piconet among a set of available piconets[[,]] all of which are determined to be using at least one of the subset of codes a result of the scan performed by the means for scanning of which is already used and for using said at least one used subset of codes for the next communications with other devices of the joined existing piconet (sections **[13], [105], [124], describing a new link is established for a new node in a preexisting master node network)**, [[,]] ~~depending on the or each found used set of codes.~~

Johansson does not specifically show CDMA, however, Johansson discusses channel access code, device access code, inquiry access code being used during a discovery and joining of a node into piconet of a scatternet in an ad hoc network (see sections |11|, |102|). Habetha discloses CDMA (see column 4 **lines 1-25, where Habetha discusses CDMA method being used in an ad hoc network for data exchange between terminals)**.

Since both Johansson and Habetha teach about ad hoc network comprising a plurality of terminals, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify Johansson teaching, and have CDMA, taught by Habetha, to improve the reconfiguration of an ad hoc network, as discussed by Habetha (col 1 lines 1-67).

Consider claim 12, (Currently Amended) [[-]]Ad-hoc radio communication system comprising

devices having an equivalent communication architecture, the devices being gathered in several piconets,

the devices of a same piconet all being able to directl3~ communicate with one another, each piconet

including a piconet coordinator (PNC), the multiple access scheme for the radio communication between

the devices being a Code Division Multiple Access (CDMA) scheme, characterized in that wherein the set

of available codes is split into pre- defined disjoined subsets of CDMA codes (Ci), all the subsets of

CDMA codes (Ci) being known by each device, and all the devices of a same piconet using CDMA codes

in the same associated subset of CDMA codes (Ci) for communicating with one another, and in that each

device includes:

Johansson discloses:

[[-]]means for scanning the radio environment looking for at least one used subset of codes which

is associated with an existing piconet when the device is added in the ad-hoc radio communication system

(sections [9], [13]-[14], [17], [24], [110], [182], describing a new node joins a piconet by initiating a

PAGE scan for a broadcast address in a piconet), and means for:

[[-]] becoming a piconet coordinator (PNC) of a new piconet and for selecting a subset of CDMA

codes (Ci) for the new piconet if no existing piconet is determined to be using at least one of the subset of

codes as a result of the scan performed by the means for scanning (section **[13], [18], disclosing a new**

node joins a piconet and becoming a master node, which forms a new piconet); or

[[-]] joining an existing piconet among a set of available piconets[[,]] all of which are determined

to be using the at least one of the subset of codes as a result of the scan performed by the means for

scanning of which ig already used and for using said at least one used subset of codes for the next

communications with other devices of the joined existing piconet (sections **[13], [105], [124], describing**

a new link is established for a new node in a preexisting master node network), depending on the or

each found uGed Get of codeG (Ci).

Johansson does not specifically show CDMA, however, Johansson discusses channel access code, device access code, inquiry access code being used during a discovery and joining of a node into piconet of a scatternet in an ad hoc network (see sections [11], [102]). Habetha discloses CDMA (see column 4 lines 1-25, where Habetha discusses CDMA method being used in an ad hoc network for data exchange between terminals).

Since both Johansson and Habetha teach about ad hoc network comprising a plurality of terminals, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify Johansson teaching, and have CDMA, taught by Habetha, to improve the reconfiguration of an ad hoc network, as discussed by Habetha (col 1 lines 1-67).

Consider claim 2, (Currently Amended) Johansson, as modified by Habetha, further discloses method according to claim 1, ~~characterized in that~~ further comprising defining a broadcast code (Cibe) ~~is (Ci) for~~ permitting the piconet coordinator (PNC) to broadcast information towards all the devices of the associated piconet and in that wherein the scanning of the radio environment by each new device ~~added in the ad hoc radio communication system listen to the radio environment~~ is performed by looking for ~~a or each~~ any CDMA broadcast code (Cibe) for determining that at least one at used subset of CDMA codes (Ci) which is associated with an existing piconet is present (sections [109]-[110]).

Consider claim 3, (Currently Amended) Johansson, as modified by Habetha, further discloses a method according to any one of the preceding claims, ~~characterized in that~~ wherein, if the new device scanning its radio environment determines one or more subsets used subset of CDMA codes (Ci) are being used by a set of associated to a piconet[[.]] existing piconets corresponding to each subset of CDMA codes being used, the new device determines availability of each of the existing piconets corresponding to each subset of CDMA codes (Ci) being used based on applying an availability criteria (sections [12], [62], [66], [75]), [[,]] ~~the set of available piconets among the piconets associated to the or each found used subset of codes (CO, and in that the set of available piconet only contains the piconets~~

which complie~ with the availability-criteria.

Consider claim 5, (Currently Amended) [[-]] Johansson, as modified by Habetha, further

discloses method according to claim 2 any one of the preceding claims, wherein characterized in that[[:]]

[[-]]if the set of available piconets is empty none of the existing piconets corresponding to each

subset of CDMA codes (Ci_) being used is determined to meet the availability criteria, designating the

new device as becomes a piconet coordinator (PNC) of a new piconet and selecting a not yet used subset

of CDMA codes (Ci) for use in the new piconet (section [13], [18], disclosing a new node joins a

piconet and becoming a master node, which forms a new piconet);

[[-]]if the set of available piconets contains only a single piconet corresponding to each subset of

CDMA codes (Ci_) being used is determined to meet the availability criteria, adding the new device joins

to said single piconet and uses the subset of CDMA codes (Ci) of said single piconet for the next

communications (sections [13], [105], [124], describing a new link is established for a new node in a

preexisting master node network); [[;]]~

[[-]]if the set of available piconetG contains at least two piconet more than one existing piconet

corresponding to each subset of CDMA codes (Ci_) being used is determined to meet the availability

criteria, ordering the more than one existing piconet corresponding to each subset of CDMA codes (Ci_)

being used into a set of ordered available piconets are ordered according to a predetermined Criteria and

adding the new device joins to the first available piconet in the set of ordered available piconets (sections

[13], [105], [124]).

Consider claim 6, (Currently Amended) [[-]] Johansson, as modified by Habetha, discloses

method according to claim 5, characterized in that wherein said criteria is the radio quality (col 1 lines 55-

65).

Consider claim 7, (Currently Amended) [[-]] Johansson, as modified by Habetha, further

discloses Method according claim 2 any one of the preceding claims, wherein adding the new device to an

existing piconet[[,]] includes the new device sends sending a request for attachment to the piconet

coordinator (PNC) of the existing piconet being joined by the new device and on reception of receiving

said request for attachment, the piconet coordinator (PNC) of the existing piconet sends to the new device

sending an indication of a CDMA reception code (Cj) among the subset of CDMA codes (Ci) associated

with the existing piconet to the new device and the new device using[[,]] the CDMA reception code (Cj)

(sections [13], [15], [61]-[62], describing node joining new piconet, piconet information known by all

members of the piconet), [being to be used by the new device for reception of data.

Consider claim 8, (Currently Amended) [[-]] Johansson, as modified by Habetha, further

discloses Method according to claim 7, characterized in that wherein said indication of the CDMA

reception code (Cj) to be used for reception of data is a pointer on o__f 8 bits as defined in 802.15.3

standard, said pointer indicating the CDMA reception code (Cj) as known by the new device (**sections**

[13], [15], [61]-[62], describing node joining new piconet, piconet information known by all

members of the piconet).

Consider claim 9, (Currently Amended) [[-]] Johansson, as modified by Habetha, further

discloses Method according to any one of claims claim 7, wherein, after a new device has joined an

existing piconet, the piconet coordinator (PNC) of the existing piconet sends[[,]] to all the deviceg of the

piconet [[,]] sending an identification of the new device together with an indication of the reception code

(Cj) to be used for reception by the new device to the other devices of the existing piconet (**sections [13],**

[15], [61]-[62], describing node joining new piconet, piconet information known by all members of

the piconet).

Consider claim 10, (Currently Amended) [[-]] Johansson, as modified by Habetha, further

discloses Method according to any one of the preceding claims, characterized in that claim 7, wherein,

when a given device is sending data with a given reception CDMA code (C,j) to another an expected

receiving device in the same piconet, the [[a]] device also sends sending attributes relating to the expected

receiving device[[,]] and the expected receiving device[[,]] the given reception CDMA code (C~) of"
which i~ the given reception code (C,-i)[[,]] processes processing the sent data only if the sent attributes
relate to it (sections [63], [67], disclosing establishing an efficient scatternet, a network ID such as a
piconet ID can be used by a node to determine if another detected node is part of the same piconet).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should
be directed to Huy C. Ho whose telephone number is (571) 270-1108. The examiner can normally be
reached on Monday - Friday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc
Nguyen can be reached on 571-272-7503. The fax phone number for the organization where this
application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application
Information Retrieval (PAIR) system. Status information for published applications may be obtained
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Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR
CANADA) or 571-272-1000.

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